

nec users' group NEWSLETTER



The Hong Kong government's Architectural Services Department has awarded a HK\$758 million (£74 million) NEC3 ECC Option B for a new swimming pool complex in Tin Shui Wai (see page 3).

NEWS

NEC launches new NEC4 facilities management forms

ELIZABETH BROOKFIELD NEC PRODUCT DEVELOPMENT

NEC is launching a new pair of contracts this month specifically for procuring facilities management services. The NEC4 Facilities Management Contract (FMC) and NEC4 Facilities Management Subcontract (FMS) have been produced with the support of the Institute of Workplace and Facilities Management (IWFM).

Like the NEC4 Term Service Contract (TSC) and its short (TSSC) and subcontract (TSS) versions, the new contracts are designed for appointing suppliers for a defined period of time to manage and provide a service. But while the facilities management industry has been using TSC for large-scale work, a substantial part of the sector was not using it or TSSC because they felt the contracts did not provide the procedures needed for their particular services.

Sector-specific contract

NEC therefore partnered with IWFM to identify best practice in the sector and establish the way forward. It became clear that rather than amending the TSC, a specific contract for facilities

successfully implementing facilities management contracts with the current form.

The result is a new contract that meets the diverse needs of the facilities management sector while also integrating with the NEC4 suite. The TSC and FMC can be used for any type of service but users in certain sectors may find the facilities management versions more accessible or user friendly due to the terminology and processes being more closely aligned to reactive maintenance.

Recommended version

The TSC remains valid for all services other than facilities management and, while users may continue to use the TSC for facilities management work if they consider it meets their needs, the new FMC is now the recommended NEC4 form for new facilities management contracts.

The new contracts and associated user guides will be launched at a webinar this month and will initially be available as pre-publication versions. The formal first editions will be released later this year, along with a short form (FMSC) and

Training and consultancy in relation to the new contracts will also soon be available.

For further information please telephone +44 20 7665 2446 or email info@neccontract.com.

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EDITORIAL

Tell your PI insurer or broker that you use NEC and you might save money



RUDI KLEIN NEC USERS' GROUP PRESIDENT

Best wishes to all NEC users around the world for 2021. The resilience you have demonstrated last year has been outstanding, with unprecedented collaboration across all sectors of the construction industry throughout the Covid-19 pandemic.

But as we finally start to emerge from one crisis we now face another: the market for construction professional indemnity (PI) insurance. Premiums have sky-rocketed for both contractors and consultants to the point where they are simply unaffordable. Last year I was told by one contractor it had been quoted a \$75,000 premium for just \$1 million of cover.

The reasons for the crisis in the PI market are manifold. They include the Grenfell fire, a high incidence of defects, water leakages and poor supply chain resilience. Over the last couple of years, 14 PI insurers have left the construction market, leaving many firms struggling to get contractually required cover.

Contractual PI requirement

For example, the NEC4 Professional Service Contract requires consultants to insure against their liability arising from a, 'failure to use the skill and care normally used by professionals providing [similar] services' (clause 83.3). The cover is to be maintained from the starting date until the end of the period stated in the contract data. On each renewal of the policy, consultants are expected to certify to clients that the policy has been renewed.


But if a consultant is unable to afford to renew its PI insurance with the same level of cover, the client has the option of making alternative insurance arrangements and charging the premium to the consultant. It is quite possible the client may only be able to secure alternative cover at an exorbitant rate that is completely beyond the consultant's ability to pay. NEC Z clauses often qualify the obligation to maintain insurance in place with the proviso it is available at 'commercial reasonable rates', whatever that means.

Open dialogue with insurers

Either way, it is in the interests of all in the construction industry – clients, consultants and contractors as well as insurers – to address the PI crisis. I believe NEC users should open a dialogue with PI insurers and brokers, explaining why the structured and proactive approach to risk

management of NEC contracts make NEC users a much better risk than other contract users.

Given the primary focus of NEC contracts is on minimising risk, this should form a solid basis for a discussion on how we can reduce PI premiums. A PI insurer is also more likely to derive greater comfort from the fact that all NEC contracts and subcontracts used on a project are unamended, having a minimum of Z clauses that do not seek significantly to alter the balance of risk.

If I, as a consultant or contractor, can demonstrate to a PI insurer that a significant part of my turnover is delivered under NEC contracts, I would hope that this would have a favourable impact on my premium. In effect it is like telling my home contents insurer that I have fitted the best possible locks to all my external doors and windows. Views from insurers and brokers would be most welcome. 

'A PI insurer is also more likely to derive greater comfort from the fact that all NEC contracts and subcontracts used on a project are unamended, having a minimum of Z clauses that do not seek significantly to alter the balance of risk'

NEWS

HK Architectural Services adopts ECC Option B in pool project



IVAN CHEUNG NEC ASIA-PACIFIC USERS' GROUP SECRETARY


The Hong Kong government's Architectural Services Department (ArchSD), a jade member of the NEC Users' Group, has awarded a HK\$758 million (\$74 million) NEC3 Engineering and Construction Contract (ECC) Option B (priced contract with bill of quantities) to Unistress Building Construction Limited for construction of a new swimming pool complex in Tin Shui Wai in the North West Territories.

The work involves building an outdoor swimming pool and training pool, an indoor heated training pool and jacuzzi, landscaped seating and play areas, and a cycle track connected to Tin Sau Road Park cycle track. The contract includes secondary options X1, X7, X14 and X16, with additional conditions of contract regarding the use of dispute resolution advisor to help avoid and resolve disputes, a role similar to option W3 on a dispute resolution board in NEC4 ECC. The work started in September 2020 and is due for completion in 2023/2024.

Jointly organised events

As I mentioned in Issue 109, the NEC Asia Pacific Users' Group co-organised an online seminar with the Construction Industry Council (CIC), the Hong Kong Institute's School of Professional Development in Construction (SPDC) and the Institution of Civil Engineers Hong Kong Association in November last year. NEC Users' Group secretary Robert Gerrard and barrister Yeung Ming-Tai gave a presentation on how to handle different opinions between the project manager and contractor under NEC. The event was well attended with over 100 people logging in.

A second event in December 2020 was jointly run with CIC, SPDC and the Hong Kong Institute of Construction Managers. Peter Clayton and Alexander Rosati walked attendees through the legal and insurance perspectives of design, cost saving design and insurance under NEC contracts in Hong Kong.

Four future events are planned, which will be run with Hong Kong Institution of Engineers, Hong Kong Institute of Arbitrators, Hong Kong Mediation Council and Hong Kong Institute of Surveyors. 

For more information please email usersgroup@necontract.com or visit CIC's website at www.cic.hk/eng/main/aboutcic/news_and_updates/events_calendar



Left to right: ICEHK vice-chairman Chris Lau, barrister Yeung Ming-Tai and NEC Users' Group secretary Robert Gerrard presented the first of

NEWS

NEC projects again shine at 2020's online British Construction Industry Awards

SIMON FULLALOVE EDITOR

NEC-procured projects have again featured strongly in this year's British Construction Industry Awards (BCIA), which were presented at an online ceremony in November.

In the eight project category awards, NEC-procured projects won three, those procured with JCT and bespoke contracts won two each and GC Works won one. In the six of seven initiative awards that related to a project, NEC-procured projects won three while PPC2000, JCT and bespoke won one each.

Project awards

In the project awards category, Climate Resilience Project of the Year went to the Bacton to Walcott coastal management project, a £20 million landscaping scheme in Norfolk, UK. Procured in September 2019 by North Norfolk District Council, Shell and Perenco using Engineering and Construction Contract (ECC) Option C (target contract with activity

schedule), the work involved building a 5.7 km long, 7 m high sand dune to protect the Bacton gas terminal complex and nearby villages from further coastal erosion (see case study on page 4).

Morecambe Catchment Strategy in Lancashire won the Utility Project of the Year. Procured by United Utilities using NEC3 ECC Options A (priced contract with activity schedule) and C in December 2020, the £52 million project has significantly reduced storm overflows into Morecambe Bay in Lancashire – the UK's largest expanse of intertidal mudflats and sand.

The Wave, Bristol won the Cultural and Leisure Project of the Year. England's first artificial surfing lake was procured in November 2019 by The Wave Group using ECC Option A. The 25 million scheme's 40 electrically driven paddles generate 1,000 waves an hour up to 2 m in height in the 200 m wide by 180 m long concrete-lined lagoon.

Finally in the project category, Highways England's newly finished \$924 million A14 Cambridge to Huntingdon improvement scheme, procured using ECC Option C, was highly commended for the Transport Project of the Year (see case study in Issue 107).

Initiative awards

In the initiative awards category, the 'carbon skyline' plan of the ECC Option C Kilo Apron Development Substructure at Heathrow airport in London won the Environment and Sustainability Initiative of the Year. Manchester University's ECC Option A Unsworth Park student accommodation development won the Community Engagement Initiative of the Year, while Yorkshire Water's Dangerous Substances and Explosive Atmospheres Regulations hazard assessment, which was let using ECC Option E (cost-reimbursable contract), won the Digital Initiative of the Year.

Finally in the initiatives category, the operations control centre of Highways England's ongoing £848 million M4 junctions 3 to 12 smart motorway scheme, procured using ECC Option C, was highly commended for the Productivity in Construction Initiative.

Case studies of all NEC-procured winning schemes will be published on the NEC website and in the newsletter in due course. ○



Procured using ECC Option A, The Wave, Bristol won the BCIA 2020 Cultural and Leisure Project of the Year



New diffusers installed as part of Morecambe Catchment Strategy – the ECC Options A and C scheme won Utility Project of the Year

NEWS

New NEC client briefing document published



CHERYL WATERMAN NEC EVENTS AND INTERNATIONAL

NEC has published a new brief introductory document on the NEC contract suite specifically aimed at public- and private-sector clients.

The purpose of the 1800-word briefing is to provide a concise insight into the client benefits

works, service or supply project worldwide.

It highlights the fact that NEC is the only standard contract suite developed by project practitioners rather than lawyers, meaning it is built around proven best-practice project

Collaborative approach

NEC's unique collaborative approach to risk is also explained, with contracts focused on fair and sustainable allocation of risk, alignment of client and supplier interests, and procedures for quick and decisive resolution of problems.

If your clients are looking to improve their procurement processes, please either let us know or consider downloading and giving them a copy of the briefing directly. ○

For more information and to obtain a copy of the briefing, please email info@necontract.com or visit www.neccontract.com

CASE STUDY: *Water*

NEC used to procure award-winning sand dune to protect Bacton gas terminals

SIMON FULLALOVE EDITOR

The innovative NEC-procured sandscaping scheme is 5.7 km long, 250 m wide and up to 7 m deep



NEC contracts have been used to deliver an innovative 'sandscaping' scheme to provide sustainable coastal protection to one of Britain's biggest complexes of natural gas terminals. A total of 1.8 million m³ of dredged sand was used to repair the storm-damaged coastline in front of the Bacton gas terminals site in Norfolk, which imports 30% of the UK's gas. The scheme won Climate Resilience Project of the Year in the 2020 British Construction Industry Awards.

In 2013, a 2 m storm surge eroded 10 m of cliff in front of the complex of terminals to leave it less than 15 m from the sea. Various 'hard' options were explored by terminal operators Shell UK Ltd and Perenco UK Ltd – including gabions, revetments, groynes and rock armour – to provide the required protection against a 1-in-10,000 year storm. However, all would have increased erosion of adjacent beaches at Bacton and Walcott.

After extensive digital modelling, a 5.7 km long Dutch-inspired sandscaping scheme was developed by the terminal operators and North Norfolk District Council, the first of its kind in the UK. It involved placing 1 million m³ of dredged sand up to 7 m deep in front of the gas terminals and a further 0.8 million m³ alongside the villages of Bacton and Walcott. The pioneering work was carried out between February and September

2019 by Team Van Oord under a £20 million NEC3 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule).

The first phase involved replacing three existing sea outfalls from the gas terminals with a new 500 mm diameter combined sea outfall extending a further 150 m offshore. A trailing suction hopper dredger then started delivering an average of 50,000 m³ of sand a day from near Great Yarmouth and pumping it ashore via a 1 km long floating pipeline. A fleet of satellite-positioned earthmoving plant formed the new 250 m wide beach at up to 240 linear m a day.

Scheme designer Royal HaskoningDHV was engaged as NEC project manager under an NEC3 Professional Services Contract option A (priced contract with activity schedule). The firm also provided design support during the works under an NEC3 PSC option E (time-based contract). The project was successfully completed on schedule and under budget in September 2019.

Delivering objectives

The Council's coastal manager Rob Goodliffe says, 'After considering a range of procurement options, the project team decided the Environment Agency's NEC-based water and environment management framework was the

'The use of the NEC on the high value but short-duration contract allowed for rapid and effective management of change'

best way to achieve our objectives of building a 6 km long sand dune in just 7 months.'

Running from 2013 to 2019, the WEM framework specified the use of NEC3 ECC Option A, C or E. 'For this project we adopted an ECC Option C target contract to allow for sharing of risks and benefits between the client and the contractor. It also provided us with sufficient flexibility to cope with the challenges of a fast-paced dredging contract with an inherent degree of cost uncertainty.'

Goodliffe says the use of the NEC on the high value but short-duration contract allowed for

CASE STUDY: *Transport*

ECC Option C used to procure five new serviced aircraft stands at Heathrow

SIMON FULLALOVE EDITOR



Four of the five NEC-procured aircraft stands can accommodate one large jet or two smaller ones

Five new state-of-the-art aircraft stands have been delivered on budget and ahead of schedule in the middle of London's busy Heathrow airport using NEC contracts. Currently used as remote parking stands on the Kilo taxiway, they will eventually become pier-served stands for the future extension of Terminal 2.

Client Heathrow Airports Limited let the £34 million design and construction project to Ferrovial Construction under an NEC3 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule) in August 2016. Lead designer Jacobs was engaged by Ferrovial under

an NEC3 Professional Services Contract (PSC), and the client acted as both NEC project manager and supervisor.

The initial work involved demolition of pier 4 of the now disused Terminal 1, breaking out 23,000 m³ of existing concrete aprons, excavating 20,000 m³ of subgrade and removal of redundant services. A total of 15,000 m³ of the apron concrete was processed and reused on site along with 87% of excavated material. Most of the remaining materials were processed offsite and returned to the airport for re-use.

The five new stands were constructed in a L shape

with 11,000 m³ of type 1 sub-base, 6,344 m³ of lean concrete and 20,277 m³ of pavement quality concrete. Four of the stands are multiple-aircraft ramp system (Mars) stands that can accommodate either one Airbus A380 or two smaller jets such as Boeing 737s, while the corner stand is for code E planes such as a Boeing 787. All stands are fully serviced including pre-conditioned air, electrical tug charging and parking, pedestrian walkways and access roads.

The project was successfully completed and

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rapid and effective management of change. 'In line with the ECC clause 10.1 obligation to work in a "spirit of mutual trust and co-operation", there was close cooperation between the project manager, the client and the contractor throughout the contract and a high level of trust was established. This ensured that any changes were agreed quickly so as to limit delays on site.'

He says that full and open discussions were had between the parties before project manager instructions were issued. 'This ensured that the high-level consequences of each change to all parties were understood at the earliest opportunity. Overall NEC promoted strong collaborative behaviours, provided a clear allocation of risk and ensured a proactive approach to programme management. The contracts were clear and concise, and were well understood by all parties.'

Goodliffe says the net result was that the complex, multi-client scheme was completed on

us to enhance the scheme with additional sand and, in spite of weather delays, we were able to open all the new beaches to the public in time for the August bank holiday weekend. We now have a natural, sustainable coastal protection scheme which will require minimal intervention over the next 15–20 years.'



A total of 1.8 million m³ of dredged sand was pumped ashore to repair the storm-damaged coastline

BENEFITS OF USING NEC

- NEC enabled delivery of a unique solution to fulfil a complex, multi-client brief to protect critical infrastructure and communities in a sustainable way.
- ECC Option C clearly shared risks and benefits between the client and contractor, and provided flexibility to cope with the challenges of a fast-paced dredging contract with a degree of cost uncertainty.
- NEC obligation to work in a 'spirit of mutual trust and co-operation' ensured that changes were agreed quickly to limit delays on site, enabling the scheme to be delivered on time and under budget.

>> Continued from page 5



commissioned 3 months ahead of schedule in March 2019. Heathrow Airports presented the project team with its Doing-The-Right-Thing award for exemplary collaboration and the scheme was shortlisted for Transport Project of the Year in the 2020 British Construction Industry Awards.

Promoting collaboration

The Kilo apron development was let as part of Heathrow's £1.5 billion NEC-based construction delivery integrator framework for the Q6 2015–2019 regulatory period. The framework was awarded to Balfour Beatty, Mace, Morgan Sindall and Ferrovial, and has since been extended to 2021.

Project manager Craig Williamson says, 'We adopted the NEC family of contracts as our preferred contracting mechanism for the Q6 framework. The contracts are written in simple English, which means all parties fully understand their obligations and responsibility, and the obligation to act in a "spirit of mutual trust and co-operation" helps to promote a collaborative relationship, which is key to our project delivery. They also promote a proactive approach to managing change.'

He says the framework enabled full collaboration between all delivery integrator contractors from the earliest stages of the Kilo apron development. 'I believe this was key to the project's success. The

relationships forged with Ferrovial and the other contractors and suppliers since 2015 is something we have obtained numerous benefits from during the years, both on the Kilo apron development as well as in later projects and interfaces across Heathrow.'

Williamson says NEC contracts helped to achieve collaboration from the outset through risk identification and management exercises in the design development stage. 'Since then we held weekly early warning meetings to identify and mitigate risk. The ECC Option C target cost contract with its pain-gain share arrangement ensured we all pushed in the right direction and mutually benefitted from the project's success.'

He says the contractor's flexibility to accommodate changes to the scope and programme was outstanding. 'For example, Ferrovial readily accepted the need to transfer some tunnel infill works from its scope to that of an adjacent framework contractor to gain project efficiencies, despite reducing the value of its own work.'

Williamson adds that monthly project review sessions held at project level ensured proper control of budgetary and programme impacts. 'This helped us to achieve the opening of the stands three months ahead of schedule despite a multitude of challenges during the project's lifetime.'

BENEFITS OF USING NEC

- NEC contracts' simple English meant all parties were fully aware of their contractual obligations and responsibilities.
- NEC requirement to act in a 'spirit of mutual trust and co-operation' helped to promote collaborative relationships across all projects.
- NEC early warning and risk mitigation procedures promoted a proactive approach to managing change.
- ECC Option C target cost contract and pain-gain share arrangement ensured both parties mutually benefitted from completing the project on budget and three months early.

'We adopted the NEC family of contracts as our preferred contracting mechanism for the Q6 framework. The contracts are written in simple English, which means all parties fully understand their obligations and responsibility, and the obligation to act in a "spirit of mutual trust and co-operation" helps to promote a collaborative relationship, which is key to our project delivery. They also promote a proactive approach

CASE STUDY: *Water*

NEC delivers natural flood management scheme with just logs and horsepower

SIMON FULLALOVE EDITOR

A total of 10 'leaky dams' were installed across upper-catchment watercourses using NEC



Essex County Council has used NEC to procure a natural flood management scheme that was built using just logs and horses. A total of 10 'leaky dams' were installed across upper-catchment watercourses in Thorndon Country Park near Brentwood to reduce flood risk to 40 downstream homes in West Thorndon.

The 141 ha park is a site of special scientific interest with significant areas of ancient woodland and a grade II listed parkland, which meant there were restrictions on the materials and methods that could be used.

In addition to specifying locally sourced timber, the council decided to minimise the impact of construction by requiring horses to transport the logs rather than mechanical plant. Following a competitive tender, the two-month scheme was let to Hawthorn Heavy Horses under a £52,000 NEC3 Engineering and Construction (ECC) Option C (target contract with activity schedule) in October 2019.

The dams are simple timber structures installed across the watercourses, with seven upstream of Old Hall Pond and a further three downstream. They all allow normal flows to pass through them but retain water during high rainfall, creating localised storage ponds. This has reduced the speed and volume of water flowing down to West Thorndon, reducing the risk of flooding.

The timber was mostly fallen ash from the park together with some locally sourced oak. The main logs were shaped and, using a Suffolk Punch horse, dragged into position and fixed with hand-aided timber stakes. Solar-powered water-level sensors were then installed next to some of the dams for remote monitoring.

The project was delivered on time and within budget by the council's flood and water management team, with funding provided by the Environment Agency through the Anglian Eastern Regional Flood and Coastal Committee.

Clarity and transparency

Project delivery manager and NEC project manager David Chapman says, 'As a lead local flood authority, Essex County Council is responsible for managing the

surface water management plans, which identify catchments at high risk called critical drainage areas. Once these are identified, we explore the possibility of delivering a flood alleviation scheme to mitigate flood risk in the area.

'One such catchment encompassed West Horndon, which had experienced significant flooding historically from overland flows and overloaded surface water sewers. As such we investigated the area further and determined that a viable scheme could be implemented to reduce future risks within the upper hydraulic catchment in Thorndon Country Park.'

He says the council's capital flood alleviation programme has so far delivered over £16 million worth of capital schemes designed to reduce surface water flood risk. 'We have used NEC ECC Option C on many different projects in the programme over the past six years and found the NEC target cost arrangement works well, which is why we adopted it for Thorndon.'

'It gives us the ability to reject or renegotiate prices that we have queried, but it also gives our contractors the confidence of knowing there is a clear and transparent process for supporting and implementing any changes to the NEC works information.'



The main logs were locally sourced and dragged into position using a Suffolk Punch horse

"We have used NEC ECC Option C on many different projects in the programme over the past six years and found the NEC target cost arrangement works well"

According to Chapman, the NEC early warning process is also a major benefit. 'On the Thorndon contract, there were early warning notifications for things such as bad weather or additional material required, and the auditable process made this easy to track.'

The Thorndon scheme was successfully completed in November 2019 and is expected to provide whole-life benefits of nearly £140.00 in damages avoided to downstream properties and the wider economy in West Horndon. It was shortlisted for the Climate Resilience Project of the Year in the 2020 British Construction Industry Awards.

BENEFITS OF USING NEC

- Transparency in ECC Option C gave the client full control over pricing but also ensured the contractor was fairly rewarded for changes.
- NEC early warning process meant issues were flagged up at the earliest opportunity to help ensure successful delivery on time and on budget.
- NEC obligation for parties to work in a 'spirit of mutual trust and co-operation' promoted collaborative working, leading to more efficient delivery

PRACTICE

How to move from being a 'mark I' NEC4 project manager to a 'mark II'



ROBERT GERRARD NEC USERS' GROUP SECRETARY

KEY POINTS

- A 'mark I' NEC4 ECC project manager does everything correctly and within the time period allowed, such that both the client and contractor benefit.
- A 'mark II' NEC4 ECC project manager does everything correctly but much more quickly and proactively, saving both parties time and/or money.
- Examples of mark II behaviour include collaborating with the contractor to improve the scope and respond far sooner to revised programmes, contractor's designs and compensation events.

The role of the project manager is critical to the successful performance of any NEC4 Engineering and Construction Contract (ECC). While there are now many competent NEC project managers around the world, they tend to fall into two distinct types: a 'mark I', who does everything correctly and within the time periods allowed, and a 'mark II', who also does everything correctly but far more quickly and more proactively.

This article looks in detail at the behaviours of the two types – and why the second type is more beneficial to the project, client and contractor than the first.

Mark I project manager

The mark I project manager never fails the contract in terms of the correctness of their actions and the time periods allowed for these actions. They strictly comply with the provisions of NEC4 ECC clause 10.1 and clause 10.2.

Clause 10.1 demands that the project manager 'shall act as stated in this contract', such as in the following examples.

- As soon as a mark I project manager is aware of a matter which could delay completion, they notify an early warning to the contractor (clause 15.1).
- Under clause 21, where the contractor is designing parts of the works and the scope requires particulars of the design to be submitted to the project manager, the mark I project manager gives acceptance or the reasons for not accepting within the 'period for reply' (an identified term, the duration of which being stated in the contract data). The two valid reasons the mark I project manager might use for not accepting the contractor's design are stated in clause 21.2.
- In line with clause 31.3, the mark I project manager notifies acceptance of a programme or the reasons for not accepting it. The mark I project manager does this within two weeks of the contractor's submission.
- In line with clause 50.1, the mark I project

assessment date and certifies a payment within one week of each assessment date.

- In line with clause 61.1, which requires that where a compensation event arises from the project manager giving an instruction, the mark I project manager notifies the contractor of the compensation event at the time of that communication, that communication being the instruction.
- In line with clause 61.4, where a compensation event is notified by the contractor under clause 61.3, the mark I project manager replies to this notification within one week after the contractor's notification.
- The mark I project manager also follows all the communication rules set out in clause 13.

Clause 10.2 demands that the project manager acts, 'in a spirit of mutual trust and co-operation', such as in the following examples.

- Clause 15.3 demands that at an early warning meeting, those who attend co-operate in the five bullet-pointed tasks that follow. This includes making and considering proposals for how the effects of each matter in the early warning register can be avoided or reduced. Mark I project managers will tell the truth and give an informed opinion. They understand who will be affected by the event and co-operate in seeking solutions that will bring advantage to them. They know this is a truly collaborative process.
- When assessing a programme submitted for acceptance, the mark I project manager remembers there are only four valid reasons stated in clause 31.3 for not accepting. If they need to not accept, then they do so. They do not compromise their professionalism or stray outside of the contract, but they remember to state the reasons in sufficient detail to enable the contractor to correct the matter, as required in clause 13.4. Ideally, the mark I project manager speaks with the contractor before not accepting to allow for a discussion, where they may find out they are wrong or the contractor is, or both are. In this style of working, such matters can be put right during the acceptance process, leading to an acceptance within the time allowed.
- When assessing a quotation for a compensation event submitted by the contractor, the mark I project manager remembers there is a single quotation that is supposed to address all time and cost implications. They strive for the right outcome here but use good judgement as to where best to

spend their valuable time. There are lots of things to think about. For example, they spot an obvious error such as an arithmetical one and correct it. They either ask for a revised quotation, explaining why, or just assess it themselves under clause 64 if they are happy with the rest of the quotation and think that asking for and getting a revised quotation is wasteful in time and resources. If they think the amount of time and or money on the quotation is wrong, that it is far too high or far too low, they challenge it and ask questions. They may find out they are more correct than the contractor or not, as the case may be. If both parties are wrong, the mark I project manager's collaborative approach will uncover that in good time to benefit the project. When something is obviously missed out, such as a significant compensation event that clearly delays a key date or the date for planned completion of a section of the works but nothing is stated on the quotation for this delay, the mark I project manager will say and do something. And, when the contractor has made no allowance under clause 63.8 for risk, again for a significant compensation event, the mark I project manager knows that is not right and will at least ask the question 'why?'

- If option X12 on multiparty collaboration is incorporated into a contract, the clauses refer to the promoter's representative that leads the core group, which could very well be the mark I project manager. If they are not acting in this role, the mark I project manager will still have an active role within this group of partners who are collaborating to achieve the promoter's objective. The mark I project manager will share the partners' objectives too and join up the dots in a collaborative way.

Clearly the mark I project manager plays a vital and valuable role. It is the minimum target level for NEC4 ECC project manager accreditation course, and quite a leap from where some project managers are currently. Learning the right behaviours takes time, and those wishing to put themselves forward for mark I project manager roles need to have a good hard think of the competencies they have and whether these are sufficient. But it does not stop there.

Mark II project manager

The mark II project manager does everything stated above, but dramatically improves the time taken for their actions and does so with a quite different attitude and mindset.

The NEC4 ECC generally allows reasonable time periods for both the contractor and project manager

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'Clearly the mark I project manager plays a vital and valuable role. It is the minimum target level for NEC4 ECC project manager accreditation course, and quite a leap from where

LEGAL

Why clause Y(UK)2 was changed in the October 2020 amendments to NEC4



DAVID HUNTER DANIEL CONTRACT MANAGEMENT SERVICES

KEY POINTS

- Option Y(UK)2 in 2017 NEC4 TSC, PSC and DBO contracts in the UK link the final date for payment to submission of an invoice.
- Based on a recent UK court decision, the NEC4 October 2020 amendments to Y(UK)2 change the due date to the later of the date an invoice was received and 14 days from the assessment date, and make the final date for payment a fixed period from the due date.
- Clients still using 2017 versions of NEC4 TSC, PSC and DBO should note that if an invoice is submitted after seven days of the payment certificate, the Scheme for Construction Contracts 1998 could apply and dates for final payment and payless notices would be earlier.
- Both parties should carefully follow whichever version of NEC4 TSC, PSC or DBO is being used to ensure the payment process provides certainty of payment and regular cash flow.

In October 2020 NEC published a second set of amendments to the June 2017 suite of NEC4 contracts (see Issue 109). These included a change to secondary option Y(UK)2 on payments under the Housing Grants, Construction and Regeneration Act 1996 in response to a judge's decision in the case of *Rochford Construction Ltd v Kilban Construction Ltd* [2020] EWHC 941 (TCC).

This article reviews the case, highlights potential problems with the June 2017 payment regime and explains the changes made to Y(UK)2 in the October 2020 amendments.

The case

A dispute on a recently completed London building project arose over an application for payment made by subcontractor Kilban

Construction to groundworks and reinforced concrete frame contractor Rochford Construction. As the subcontract works involved 'construction operations', the UK Housing Grants Construction and Regeneration Act 1996 applied. The subcontractor referred the matter to an adjudicator, who concluded the subcontract did not comply with the payment provisions of the Act and the Scheme for Construction Contracts 1998 should apply instead. The adjudicator also decided the contractor had not complied with the Scheme and, as a result, the payment claimed by the subcontractor was owed by default.

The contractor then asked the Technology and Construction Court to decide on new issues in connection with the due date and final date for payment, and sought repayment of the sums previously paid to the subcontractor. The court dismissed the contractor's arguments on the due date, stating its case was 'incorrect and unsustainable' due to the absence of a payment schedule referred to in the contract and uncertainty as to the date by which the subcontractor was to make its application.

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to fulfil their obligations. There is even provision to extend this, such as when obtaining a quotation from a specialist subcontractor is proving difficult. But rather than delay the contract, a mark II project manager might decide to look again at the scope, which could be just too demanding (see below). Certainly, some of the time periods in NEC4 ECC are more than generous, giving the mark II project manager significant room for improving project performance.

With regard to the programme, the project manager has a very generous two weeks to reply to the submission of a revised programme. However, only a few contractors might take two weeks to prepare a revised programme, so it seems odd for it to take longer to check than it does to prepare. Even though the mark II project manager is a busy person with numerous tasks to fulfil, they will not fall into a trap of waiting until the end of the two weeks and then judging what has actually happened in the last two weeks rather than the progress and intentions two weeks ago. The mark II project manager can turn acceptance in two weeks into two minutes. They will spend time working with the contractor as the revised programme is being prepared, questioning, challenging, understanding, giving opinions and discussing. They remember that the contractor is generally spending the client's time and money, so they will work with the contractor in a collaborative way to exceed the provisions of the contract. While looking at the programme, the mark II project manager thinks of how this can be improved or even how the scope can be improved as well, and works towards getting a programme that allows for the safest, most productive and efficient project delivery possible.

With regard to contractor's design, this can

because of the number of stakeholders involved. But the mark II project manager knows that, unless the contractor is doing most of the design in an early contractor involvement project, inserting a 10 week period into the critical path of a contractor already on site makes no sense. Even where a more reasonable 'period for reply' for the design of say 4 weeks is included, this is again more than likely on the critical path, which means the client is paying for the contractor to sit and wait for acceptance. Again, the mark II project manager will work closely with the contractor during design preparation. They attend review meetings, challenge, suggest, collaborate, understand, take things away to think about and consult with others (including stakeholders), and work towards the goal of accepting the contractor's design the day it is submitted.

With regard to scope, the mark II project manager is mindful that every word of it must be physically provided by the contractor. They will look at the number of words, the number of references and the number of other cross-referenced documents and standards, and assess how realistic all this is to deliver. They will challenge whether all the requirements within the scope are actually needed, and whether anything can be eliminated or changed to improve whole-life performance. Because scope changes can be expensive in terms of time and money, they will work collaboratively with the contractor in the earliest stages of the contract to jointly see if the scope can be improved so that any changes can be made cheaply and quickly. They know this is worthwhile because a well-written, lean, clear scope without ambiguities or inconsistencies is priceless.

Finally, with regard to compensation events, the mark II project manager realises the importance of keeping the prices and various dates as up to date

cost effects of compensation events by doing so in an open, collaborative and adult way. While agreeing change can be time consuming and a burden, mark II project managers do not let it consume all of their efforts. The compensation event process is just another change management process, needing good judgement as to when and where they put their efforts. With assessments of the money side of compensation events, they try to use clause 63.2 as the first port of call. Otherwise they revert to the default of clause 63.1, but produce a joint quotation with the contractor rather than using a 'them and us' approach. If it is a significant compensation event, the mark II project manager arranges a joint team of complementary skills between the contractor and project manager's staff to agree the time and cost provisions of a quotation, enabling it to be reviewed, submitted and accepted as quickly as possible. If a dispute emerges that is even worth having, the mark II project manager helps to get it on the table quickly and in front of senior project representatives. They do not take a confrontational position; they aim for openness and honesty and try to find something everyone can all live with.

The mark II project manager also applies the above approach to several of the other processes in the NEC4 ECC that lend themselves to this type of technique. They work collaboratively to create significant improvements in outcomes compared to the traditional 'them and us' model.

Summary

NEC4 ECC clients and contractors will be well served if there is a mark I project manager in place. But they will benefit even more with a mark II version. This can happen in one of two ways – either the mark I version upgrades themselves, or the client

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Accordingly, the court decided the Scheme should apply and the due date for payment was the date of the subcontractor's application. Regarding the final date for payment the court also held that the Scheme should apply. Citing Sir Peter Coulson in *Bennett (Construction) Ltd v. CMC MBS Limited* [2019] EWCA Civ 1515, the court reaffirmed the purpose of the Act is to achieve certainty and regular cash flow. The court criticised the subcontract's payment provisions as 'unworkable'. The problem again for the contractor was linkage to an absent payment schedule and uncertainty over a payment certificate, which the subcontract required to be issued with an invoice.

The subcontractor also presented a legal argument that section 110(1)(b) of the Act requires the final date for payment to be linked to the due date by a fixed time period. It should not be an event controlled by one of the parties, such as payment notice or invoice. This is in direct contrast to section 110(1)(a), which requires, 'an adequate mechanism for determining what payments become due under the contract, and when.'

Judge Sara Cockerill agreed with the subcontractor, expressing the view that, 'the final date has to be pegged to the due date, and be a set period of time, and not an event or a mechanism.' Such views do not form binding precedent but are considered by the courts as persuasive authority.

June NEC4 contracts

The June 2017 editions of the NEC4 Term Service Contract (TSC), Professional Service Contract (PSC) and Design Build and Operate Contract (DBO) include payment mechanisms which link the final date for payment to submission of an invoice.

Secondary option Y(UK)2 is a payment clause for use when the Act applies. Clause Y2.2 in the NEC4 TSC includes the words, 'The final date for payment is the later of... fourteen days after the date on which payment becomes due, or a different period for payment if stated in the contract data and... seven days after receipt by the party making the payment of an invoice, issued in accordance with these conditions of contract' (bullets omitted). Y2.2 also states that the service manager's certificate is the notice of payment.

Core clause 51.1 requires the payee to submit an invoice for the amount to be paid within one week of the service manager's certificate. The final date for payment is therefore pegged to the submission of a valid invoice which is in turn is pegged to the notice of payment (Figure 1(a)).

If the service manager does not issue the payment certificate, the contractor's application for payment becomes the payment notice (section 110B(4) of the Act). However, if the contractor issues its invoice late or the invoice is invalid, this will extend the final date for payment. If the contractor does not submit its invoice, the final date is never reached.

Making submission of a valid invoice a condition to payment is not unusual and it has been common practice for clients to amend NEC forms to incorporate invoicing. This is principally to allow both the supplier and client comply with their obligations under the Value Added Tax (Amendment) (No 5) Regulations 2007. In the UK, all VAT registered businesses are required to provide a VAT invoice to their customers on

October 2020 amendments to Y(UK)2

The October 2020 amendments to clause Y(UK)2 affect the NEC4 TSC, PSC and DBO. The new clause states, 'The date on which a payment becomes due is the later of... the date of receipt by the Party making payment of an invoice, issued in accordance with these conditions of contract and... fourteen days after the assessment date' (bullets omitted).

The contracts now use submission of the contractor's invoice to provide a mechanism for determining the payment due date. Core clause 51.1 has not been amended, so the service manager is still required to issue its payment certificate within one week of the assessment date. The final date for payment is now pegged to the due date by a fixed period of seven days unless a different period is stated in contract data part one.

The seven days between the due date and final date for payment ensures 21 day payment terms are maintained. However, clients should note this now means the latest date for serving a payless notice coincides with the due date for payment (Figure 1(b)).

Conclusion and recommendations

If the judge's view in *Rochford v. Kilban* is correct, clients still using the June 2017 editions of the NEC4 TSC, PSC or DBO should be mindful that where a valid invoice has not been submitted within seven days of the payment

certificate, the Scheme may apply rather than the Act. This will result in an earlier date for both the final date for payment and the payless notice than that intended by the contract.

Whether the June 2017 or amended October 2020 version of Y(UK)2 is being used, to ensure the payment process provides certainty of payment and regular cash flow, the parties should follow the contract. In particular they should ensure that

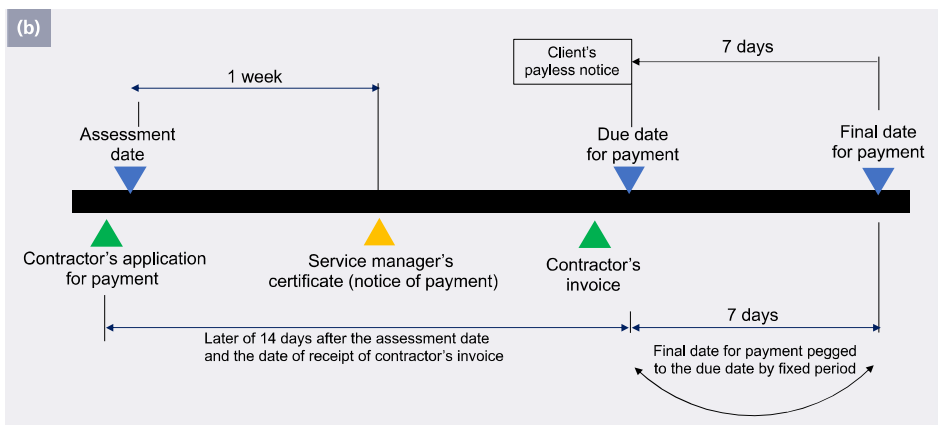
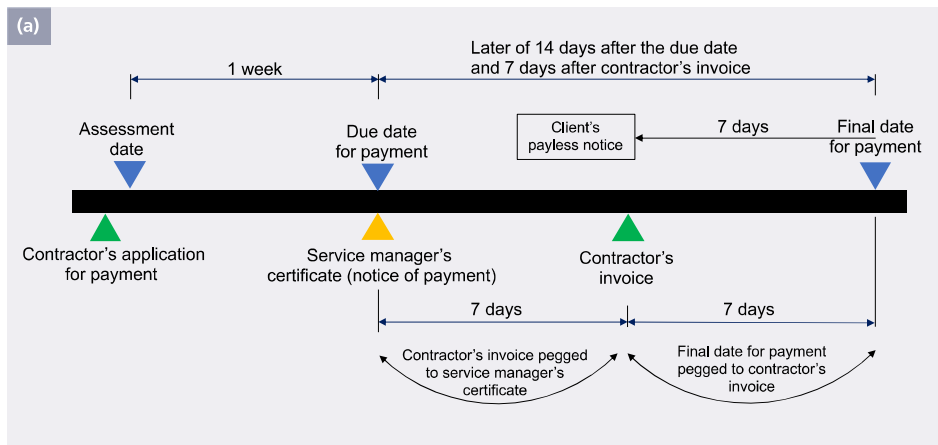
- the contractor/consultant submits its application before the assessment date, clearly setting out the amount it considers is due (clause 50.2)
- the service manager considers the payment application when assessing the amount due and issues a certificate within one week of the assessment date (clause 50.2/51.1)
- the contractor submits its invoice within seven days of the service manager's certificate, showing the amount due as stated on the certificate (clause 51.1)

The parties should also work together to maintain a diary of dates for the relevant applications, certificates and payments. For the reasons stated in *Rochford v. Kilban* and other cases (for example *Balfour Beatty Regional Construction Ltd v. Grove Developments Ltd* [2016] EWCA Civ 990), it is not recommended a payment schedule is included in the contract.

Full details of all the October 2020 NEC4 amendments are published on the NEC website.

Figure 1.

Due dates and final dates for payment when the Housing Grants, Construction and Regeneration Act 1996 applies using Y(UK)2 of the original June 2017 NEC4 TSC (a) and (b) after the October 2020 amendments



PRACTICE

FAQs



ROBERT GERRARD
NEC USERS' GROUP SECRETARY

This is a selection of recent questions to the NEC Users' Group helpline and answers given. In all cases it is assumed there are no amendments that materially affect the standard NEC3 or NEC4 contract referred to.

Dealing with changes to preliminaries in an activity schedule

Question

We are the project manager on an NEC3 Engineering and Construction Contract (ECC) Option A (priced contract with activity schedule). Preliminaries have been spread as a monthly activities and named management costs for month 1, 2, 3 and so on. A number of compensation events have delayed the progress of the works and these have been implemented in accordance with the contract. However, the activity schedule has not been updated by the contractor when requested to do so. As a result, the monthly management costs no longer correlate with the other listed activities as originally planned. Also, we have no detail of what is included within each of these activities. For assessing the price for work done to date, how do we assess these activities?

Answer

Preliminaries derive from the rules associated with compiling a bill of quantities, but that is not so relevant when using an activity schedule. We usually advise that an activity schedule should be a list of physical work activities, such as building a wall or testing a drain, and all the costs associated with preliminaries should be spread within these activities. However, since this is the contract entered into by both parties, you and the contractor will just have to deal with it.

It is important to note that each compensation event is assessed based upon the effect it is forecast to have upon the defined cost of the works plus fee (clause 63.1) and upon the date for planned completion shown on the accepted programme (clause 63.3). Therefore, if a compensation event is forecast to cause delay, the defined cost of that delay, including any increase of the defined cost of preliminaries, will be included in the assessment for that compensation event.

That will be how the contractor will recover the increased costs of managing the works for a longer period. How that is put into the activity schedule is up to the contractor in the first place, but subject either to your agreement or decision on the value of that compensation event as arrived at using the processes and rules set out in clauses 62 to 65.

contractor to carry out to the activity schedule. In reality, such updating will occur mainly when compensation events are implemented (see clauses 63.12, 65.1 and 65.4). But that will not effect the existing activities, including those you have for monthly preliminaries. Therefore, our view is that each preliminaries activity is paid each month as an activity which is complete and that will carry on until the original number of months have been paid for. At that point no further payments should be made under that activity. Instead, the contractor will recover its increased preliminaries through the changes in the activity schedule.

If a new activity is inserted by simply saying 'compensation event number xyz', the contractor will be paid when the work of that compensation event is completed. That will be acceptable for minor compensation events, but major ones will usually have a mini activity schedule to themselves. How that is done is usually decided by you and the contractor discussing and agreeing such matters, as part of the assessment of each compensation event.

It is also important to note that the assessing of compensation events is not something that is left to the end of the work. Both you and the contractor are obliged to assess these within the timescales set out in clauses 61 to 65, which are set in terms of weeks, not months or years. If these assessments happen late without any payment being made on account during the period, the employer will have to pay a large amount of interest for these compensation events, see clause 51.3.

Paying for certain hand tools

Question

We are contractor tendering for an NEC4 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule). NEC3 ECC dealt with hand tools not powered by compressed air within the working areas overhead percentage. How is that dealt with in the NEC4?

Answer

The treatment of hand tools and all of the other items previously included within the working areas

overhead percentage in NEC3 ECC has changed in NEC4 ECC, which has removed that percentage altogether. Instead, these items will now be paid for, if at all, under the relevant headings of the schedule of cost components, namely equipment, plant and materials, subcontractors, and charges. Hand tools, just like any other tools, will usually be included in the definition of equipment and are paid for as such. But they are only paid to the extent that it has been paid for by you. If a carpenter turns up on site with their own hand tools and uses them, that will not have cost you anything and therefore nothing will be paid under this item.

Contractor ignores an instruction

Question

We are the employer on an NEC3 Engineering and Construction Contract (ECC) Option C (target cost with activity schedule). A clause 34.1 instruction to stop work was issued by our project manager in relation to an element of construction as an issue relating to potential contamination had not been resolved by our contractor prior to starting excavation. The contractor is responsible for the design of the works. What sanctions has our project manager got if a clause 34.1 instruction is ignored? Also, can the costs associated with the earthworks be disallowed on an Option C contract?

Answer

Your contractor is required to obey a valid instruction issued by your project manager in accordance with the contract, see clause 27.3. However, it is probable that if the contractor had obeyed this instruction it would have been a compensation event under clause 60.1(8), unless the works information clearly states that such matters must be 'resolved' (we are not sure what you mean by that) before work commences. In addition, if such contamination was unexpected, the cost and time of it being dealt with could be a compensation event under clause 60.1(12).

The contractor will be in breach of contract if it does not obey the project manager's instruction, but we doubt that you will have suffered any material damages you will be able to recover. Indeed, in the case of an Option C contract, you have shared the savings resulting from the contractor not obeying the instruction. If this was a serious issue, you may be able terminate, but that would only be possible after the contractor had been notified and the conduct continued for a further 4 weeks, see clauses 91.2 and 91.3.

As to the costs being disallowed costs, that will only be the case if they fall within one of the definitions in clause 11.2(25). That will depend upon whether or not there was an acceptance procedure in the works information that the contractor has not followed. We doubt that that is the case given that this is not really about you 'accepting' something and, in any event, this will have probably led to a reduction of costs not an increase. Therefore, there will be no, 'cost which...was incurred only because the contractor did not...follow an acceptance...procedure stated in the works information', see the wording of the third bullet of clause 11.2(25). ○

'The treatment of hand tools and all of the other items previously included within the working areas overhead percentage in NEC3 ECC has changed in NEC4 ECC,



ICE Register for Accredited NEC professionals

Below are new entrants on the Institution of Civil Engineers (ICE) Register for Accredited NEC Professionals at necprofessionals.ice.org.uk. The register recognises the technical and practical skills required of project managers and supervisors using the NEC4 or NEC3 Engineering and Construction Contract (ECC) and service managers using the NEC4 or NEC3 Term Service Contract (TSC). All individuals on the register have completed the relevant accreditation programme and successfully passed the stage 1 and stage 2 assessments.

Accredited NEC4 ECC Project Managers

Wing Tat Chan
Pei Lin Cheung
Chi Shing Cheung
Lai Nga Chow
Paul Jarvis
Kit Fung Lam
Kai Wai Lau

Calvin Leung
Chi Chung Leung
Joseph Lor
Peter Millachip
Chak Hong Ngai
Jose Perez Martin
Haady Sherif
San Kak So
Lan Wei

Accredited NEC3 ECC Project Managers

Oksana Holgate
Aaron McGrath
Thomas Morton
Leen Saeb

Accredited NEC4 ECC Supervisors

Steven Crellin

neC DIARY

17 February	NEC3 to NEC4: ECC Project Manager Accreditation extension	Virtual (HK)
24 February	NEC3 to NEC4 ECC Project Manager Accreditation extension	Virtual (UK)
24 February	NEC4 Foundation Certificate	Virtual (AU)
01 March	NEC4: ECC Project Manager Accreditation	Virtual (UK)
03 March	NEC3: Introduction to the ECC	Virtual (UK)
08 March	NEC3: ECC Project Manager Accreditation	Virtual (HK)
15 March	NEC4: ECC Project Manager Accreditation	Virtual (HK)
15 March	NEC4: ECC Supervisor Accreditation	Virtual (UK)
22 March	NEC3: TSC Service Manager Accreditation	Virtual (UK)
23 March	NEC3: Preparing and Managing the ECC	Virtual (UK)
25 March	NEC4: Introduction to the TSC	Virtual (UK)

Key: ECC – Engineering and Construction Contract, TSC – Term Service Contract, Virtual – online course running from 9 am to 5 pm local time in Britain (UK), Hong Kong (HK) or Australia (AU) (other courses subject to changing Covid-19 restrictions).

NEC Users' Group members

A warm welcome is extended to all new members, highlighted in **bold** in the membership category lists below.

PLATINUM

AWE
Dounreay Site Restoration Ltd
FCC Construcción
Geoffrey Osborne Ltd
High Speed Two (HS2) Highways England Co Ltd
INOVYN ChlorVinyls Ltd
Keating Construction Lantis
LLW Repository Ltd
MagnaX Ltd
MTR Corporation Ltd
Pinsent Masons LLP
RWE Renewables UK Ltd
Sellafield Ltd
Skanska Construction UK Ltd
Southend Borough Council (HQ)
Southern Water Strategic Estates, House of Commons
Tarmac
Transport for London
TwoPlusTwo Commercial Services Ltd

GOLD

AECOM
Arcadis
Atkins UK
Balfour Beatty
Balfour Beatty
BAM Construct UK Ltd
Bechtel Ltd
Bristol City Council
CampbellReith Canal & River Trust
Capita Property & Infrastructure Ltd
Central Procurement Directorate
Costain Ltd
CPMS Ltd
Currie & Brown UK Ltd
Defence Infrastructure Organisation (DIO)
Dover Harbour Board
Driver & Vehide Standards Agency
East Sussex County Council
Eurovia Group Ltd
Farrans (Construction) Ltd
FCO Services
Framatome
Galliford Try
Gateshead Metropolitan Borough Council
GigaClear Ltd
Heathrow Airport Ltd
Imperial College London
Instalcom Ltd
Interseve Construction Ltd
Jackson Civil Engineering Group Ltd

John Sisk & Son Ltd

Kone PLC
Laing O'Rourke
Mace Group
Moreton Hayward Ltd
Morgan Sindall Construction & Infrastructure Ltd
National Grid Plc
Network Rail
NG Bailey
Northern Ireland Water
Northumbrian Water Ltd
Ove Arup & Partners Ltd
Oxfordshire County Council
Perth and Kinross Council
Pick Everard
Project Centre Ltd
Rider Levett Bucknall
RPS Group Plc
RWE Renewables UK Ltd
SKA Organisation
SSE Plc
The British Museum
The City of Edinburgh Council
The Coal Authority
The Orange Partnership
Vanderlande Industries UK Ltd
Vinci Construction UK Ltd
Volker Services Ltd
Warwickshire County Council
Wood Group UK Ltd
WYG Management Services
YGC
Yorkshire Water Services Ltd

SILVER

Aberdeenshire Council
Barhale Plc
BEP Delivery Team
Boskalis
Westminster Ltd
Buckinghamshire County Council
Burness Paull
Cambridgeshire County Council
City of York Council
Connect Plus Ltd
Cornwall Council
Defence Science & Technology Laboratory
Dyer & Butler Ltd
East Ayrshire Council
Environment Agency
Faithful+Gould
Gleeds UK
GVE Commercial Solutions
Jacobs UK Ltd
Jersey Electricity Co Ltd
Leicestershire County Council
MacKenzie Construction Ltd
Management Process Systems Ltd
Mott MacDonald Ltd
Norfolk County Council
North Ayrshire Council
Northumberland County Council
Osborne Clarke
Pagabo
R J McLeod Ltd
South East Water Ltd
South Gloucestershire Council
South Lanarkshire Council
South West Water Ltd
Stantec UK Ltd
Sutton & East Surrey Water Plc
Thomas Bow Ltd
TLT LLP
Tom Crowe
Procurement Solutions Ltd
Turner & Townsend
West Berkshire Council
Wilson of Cambridge
Worcestershire County Council
Yelland Savage Ltd

BRONZE

Alehan Project Engineering Ltd

Ansaldo Nuclear
AstraZeneca
Black & Veatch Ltd
Breheny Civil Engineering Ltd.
Caledonian Maritime Assets Ltd
Capital Consulting International Ltd
Castle Hayes
Pursey LLP
CCJ Group Ltd
Chandler KBS
City of Salford Council

Construction Dispute Resolution

Corderoy
Costain Ltd
Ctori Construction Consultants Ltd
Daniel Commercial Management Services
Deane Public Works Ltd
Department of Health
Diamond Light Source Ltd
Doig & Smith Ltd
East Lothian Council
Eastern Solent Coastal Partnership
ECS Associates (Pty) Ltd
Fife Council
Foot Anstey LLP
FTI Consulting
Fulkers
GHD
Glanville Projects Ltd
Hanscomb
Intercontinental

HS Infra

Ironside Farrar Ltd
J T Mackley & Co Ltd
JLL Consultancy Ltd
John Papworth Ltd
K&L Gates
Lagoni
Engineering Ltd
Leones Consulting
Lilleker Bros Ltd
LM Services
Loughran Associates Ltd
Mangotree Kent Ltd
McAdam Design

McKenna Professional Services Ltd

McNealy Brown Ltd
MissionCX Ltd
MM Miller (Wick) Ltd
MY Cheng & Co (Engineering) Ltd
NBS Services
NE Consult
NMCN PLC
Novi Projects
Orkney Islands Council
Palbro Consulting Ltd
Pat Munro (Aness) Ltd
pdConsult

Peak Gen Top Co Ltd

Procom-IM Ltd
Purcell Solutions Ltd
Quigg Golden Ltd
RedRay Ltd
RG Carter Technical Services Ltd
Ronez
Royal Haskoning DHV UK Ltd
RSK
RW Hayes
Schneider Electric Systems UK Ltd
Severn Trent Water Services Ltd
Solomons Europe Ltd
Steve Brown & Associates Ltd
Summers-Inman LLP

Sweet Project Holdings Ltd

Synergie Training
The Clarkson Alliance
The Francis Crick Institute
The Highland Council
The Rochester Bridge Trust
Timothy Willis
TKR Consulting Ltd
Trebles Consulting Ltd
VVB Engineering UK Ltd
Wallace Stone LLP
Wrekin Consulting Ltd

RUBY

Arup

JADE

Airport Authority
Hong Kong
Architectural Services Department, HKSAR
Atkins China Ltd
Beria Consultants Ltd
BK Surco Ltd
Building & Construction Authority
China State Construction Engineering Ltd
Chun Wo Construction & Engineering Co Ltd
Civil Engineering & Development Department, HKSAR
CLP Power Hong Kong Ltd
Construction Industry Council
Deacons
Development Bureau, HKSAR
Drainage Services Department
Electrical and Mechanical Services Department, HKSAR
Gammon Construction Ltd
HKCA Civil Engineering Committee
Hogan Lovells
Kinlan Consulting Pty Ltd
Kum Shing (KF) Construction Co Ltd
Mannings (Asia) Consultants Ltd
Meinhardt Infrastructure & Environment Ltd
Mott MacDonald Hong Kong Ltd
MTR Corporation
Paul Y. Engineering Group Ltd
Projection Group
Shui On Construction Company Ltd
The Contracts Group Ltd
The Hong Kong Institute of Surveyors
Thomas Telford Ltd
Turner & Townsend
Vastream Construction Ltd
VSL Intrafor
Water Supplies Department, HKSAR
J Browne Group Holdings
REST OF WORLD
Critical Input Pty Ltd

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Constructive contributions to the newsletter are always welcomed and should be emailed to the editor, Simon Fullalove at simon@fullalove.com (telephone +44 20 8744